Exhibit G

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THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF ALAMEDA

CALIFORNIA BERRY CULTIVARS, LLC,

Plaintiff,

v.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, a corporation,

Defendant.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA,

Cross-Complainant,

v.

CALIFORNIA BERRY CULTIVARS, DOUGLAS SHAW, AND KIRK LARSON

Cross-Defendants.

Case No. RG16813870

ASSIGNED FOR ALL PURPOSES TO JUDGE Stephen Pulido
DEPARTMENT 16

CROSS-COMPLAINT FOR DECLARATORY RELIEF; BREACH OF CONTRACT; BREACH OF IMPLIED CONTRACT; PATENT INFRINGEMENT; UNJUST ENRICHMENT; INTENTIONAL INTERFERENCE; UNFAIR COMPETITION; BREACH OF IMPLIED COVENANT

Action Filed: May 2, 2016

Defendant and Cross-Complainant The Regents of the University of California ("University") alleges against Plaintiff and Cross-Defendants California Berry Cultivars ("CBC"), Douglas Shaw, and Kirk Larson as follows:

THE PARTIES

1. CBC is a limited liability company organized under the laws of California with its principal place of business in Irvine, California.

2. Dr. Douglas Shaw is an individual who, on information and belief, resides in Davis, California. Shaw was employed by the University from 1986 until 2014. Shaw is currently a member of CBC.

3. Dr. Kirk Larson is an individual who, on information and belief, resides in Santa Ana, California. Larson was employed by the University from 1991 until 2014. Larson is currently a member of CBC.

4. The University is a California Constitutional Corporation authorized and empowered to administer the public trust known as the University of California, with full powers of organization and government thereof.

FACTS

5. Since the 1930s, the University has fostered a strawberry breeding program focused on producing new strawberry varieties (or "cultivars") as a research endeavor, which benefits the California public and the nation at large. The living genetic material of these cultivars is sometimes referred to as "germplasm." Today, the program is responsible for developing the majority of strawberry cultivars grown in the United States. Multiple generations of strawberry breeders have worked for the University in the program, each continuing the work of prior breeders and using in their breeding the results of the work of those prior breeders.

6. As part of the program, faculty employees of the University seek to breed new and useful strawberry cultivars, focusing on issues such as taste, texture, productivity, and ease of harvest and transport. Each new and distinct cultivar is an asexually reproducible plant that constitutes an "invention" eligible for protection through a "Plant Patent" in the United States

under 35 U.S.C. § 161 and "Plant Breeders Rights" under the governing conventions of The International Union for the Protection of New Varieties of Plants worldwide.

7. When a new strawberry cultivar eligible for patenting is conceived by the University's employees, the University first files a patent application on the cultivar, which names the applicable employees as inventors. Under their employment agreements with the University, these employees are required to assign all rights in potentially patentable inventions to the University. Thus, the University becomes the sole assignee and owner of the United States Plant Patents and Plant Breeders Rights covering the cultivars, and has the exclusive right to prevent others from making, using, selling, propagating, offering for sale, importing, or exporting the patented cultivars and their fruit.

8. As part of its mission to serve the California public, the University restricts the licensing of released cultivars in certain ways. For example, the University licenses newly released cultivars only to California nurseries for the first two years. After the first two years, the University collects royalties from nurseries on a per-plant basis using a three-tiered structure, with California nurseries paying the least, nurseries elsewhere in the United States and Canada paying slightly more, and all other nurseries paying the most.

9. Shaw worked as an employee of the University from 1986 to 2014, continuing the work of prior strawberry breeders who retired in the late 1980s. Larson worked as an employee of the University from 1991 to 2014 under Shaw's direction. As a condition of their employment, both Shaw and Larson signed the University of California State Oath of Allegiance and Patent Agreement. The Oath and Agreement required them to identify and to notify the University of every possibly patentable plant which they conceived or developed while employed by the University or while using the University's research facilities, and to furnish the University with complete information about the same. Additionally, at the University's option, the Oath and Agreement required (and still requires) them to execute any documents and do all things necessary to assign to the University all rights, title and interest in each potentially patentable process, plant, or product, and to assist the University in securing patent protection.

10. In addition to the Oath and Agreement, University policy at the relevant times that ownership of employee tangible research materials (along with the notebooks and records of research) lies with the University. The germplasm at issue was all conceived during the course and scope of Shaw's and Larson's employment while they were still employed with the University.

11. In 2014, Shaw and Larson announced their respective retirements from the University. Also in 2014, Shaw and Larson established CBC as private, commercial strawberry breeding company. The Statement of Information for CBC provided to the California Secretary of State lists both Shaw and Larson as founding "members" of CBC.

12. Upon their leaving University employ, the University required Shaw and Larson to leave behind all strawberry breeding program germplasm and materials that they had developed while employed at the University or using University facilities. Shaw and Larson transferred what they reported were all copies of the germplasm to other University employees for the continued use and safekeeping of the germplasm. On information and belief, the chair of their department facilitated this transfer on behalf of Shaw and Larson. The department chair was not authorized to dispossess the University of its ownership rights in program germplasm or materials, nor did he.

13. Following the transfer, the University notified Shaw that its newly hired breeder, Dr. Steven Knapp, would continue working with the strawberry breeding program germplasm, much as Shaw and Larson had worked with germplasm left by prior breeders. The University has on multiple occasions invited Shaw and Larson to communicate to Knapp any information they have that will help ensure Knapp and the University are fully informed about the value and usefulness of the plants Shaw and Larson bred before they retired. All of these invitations have been declined.

14. Based on an earlier disclosure by Shaw that certain cultivars within the germplasm were potentially patentable, the University filed provisional U.S. Plant Patent Applications on 168 varieties known within the program as the "Core Strawberry Germplasm." The University later filed non-provisional U.S. Plant Patent Application No. 14/545,653 on the Core Strawberry

Germplasm, which published as US 2015/0359150. In accordance with Shaw's and Larson's employment agreements, these applications are recorded with the U.S. Patent and Trademark Office as assigned to the University. The University has requested the assistance of Shaw and Larson in the prosecution of these applications, but has not received the assistance it requested despite the requirements of their employment agreements.

15. In 2015, Knapp sent Shaw and Larson a letter requesting their assistance in providing information on promising cultivars from advanced selections resulting from crosses that they performed in 2004-2011. These cultivars are known within the program at the "Transition Cultivars." Knapp asked also whether Shaw and Larson would assist in the patenting of such cultivars. In addition, Knapp noted certain irregularities with various cultivars and program materials from the 2012 time-frame and earlier and asked Shaw and Larson for information on these irregularities. Shaw responded that any assistance would be conditioned on the University licensing the Core Strawberry Germplasm to CBC for breeding purposes and forfeiting ownership of the Transition Cultivars. CBC followed up demanding that, in the alternative, the University license the Transition Cultivars to CBC while reserving its rights. The University notified Shaw, Larson, and CBC that these conditions were not acceptable. The University further put Shaw, Larson, and CBC on notice of its ownership of the intellectual and tangible property rights in the Core Strawberry Germplasm and Transition Cultivars, which they had already implicitly acknowledged by requesting a license.

16. In February 2016, CBC informed the University that, on January 19, 2016, Shaw and Larson purported to assign rights to CBC that they claimed to have in the Core Strawberry Germplasm and Transition Cultivars. These rights supposedly included intellectual property rights, including patent rights and copyrights, in the Core Strawberry Germplasm and Transition Cultivars. CBC also notified the University that it was using the University's Portola and Fronteras strawberry varieties for so-called "benchmarking," which is an unlicensed use under the operative contracts that the University has with nurseries that propagate these varieties. In addition to benchmarking, both asexual propagation and sexual propagation (i.e., breeding through crosses) are unlicensed uses of released University germplasm purchased through a

nursery. To date, CBC has refused to provide the University with a full copy of those assignments.

17. The allegations in CBC's Complaint and the allegations in this Cross-Complaint represent a real and immediate controversy regarding the University's intellectual and tangible property rights in the germplasm that comprises the Core Strawberry Germplasm and Transition Cultivars, including the University's rights to exclude others from unlicensed use of this germplasm, including propagation (asexual or sexual) and benchmarking, as well as CBC's infringement of those rights should it engage in unlicensed propagation (asexual or sexual) and benchmarking of this germplasm or any other University strawberry germplasm (whether released or unreleased).

THE PATENTS IN SUIT

18. U.S. Plant Patent No. 20,552 ("PP'552") is entitled "Strawberry Plant Named 'Portola.'" PP'552 issued on December 15, 2009. Shaw and Larson are named as inventors and under their employment agreements with the University they assigned PP'552 to the University. The University has been and remains the sole assignee and owner of PP'552. A true and correct copy of PP'552 is attached as Exhibit 1.

19. A U.S. Plant Patent Application No. US 13/999,312 entitled "Strawberry plant named 'Fronteras'" was filed on February 10, 2014, and published on August 13, 2015 as US 2015/0230374. It is set to issue on May 10, 2016, as U.S. Plant Patent No. 26,709 ("PP'709"). Shaw and Larson are named as inventors and under their employment agreements with the University they assigned U.S. Plant Patent Application No. US 13/999,312 (and thus PP'709) to the University. The University has been and remains the sole assignee and owner of U.S. Plant Patent Application No. 13/999,312 (and thus PP'709). A true and correct copy of U.S. Plant Patent Publication No. US 2015/0230374 is attached as Exhibit 2.

JURISDICTION

20. The allegations in the Complaint and Cross-Complaint raise federal questions under 28 U.S.C. §§ 1331 and 1338(a) including questions regarding infringement and assignment of patent rights that are the exclusive purview of the federal courts. The remaining allegations in

the Complaint and Cross-Complaint involve the same common nucleus of facts as the federal question allegations.

FIRST CAUSE OF ACTION FOR DECLARATORY RELIEF AGAINST CBC, SHAW, AND LARSON

21. The University hereby realleges and incorporates by reference each and every allegation contained in paragraphs 1-20, inclusive, as though fully set forth herein.

22. An actual controversy has arisen and now exists between CBC, Shaw, and Larson, on the one hand, and the University, on the other hand, regarding their respective rights, remedies, liabilities, and obligations regarding the ownership and use of the Core Strawberry Germplasm and Transition Cultivars.

23. The University seeks a judgment declaring that 1) as between Cross-Complaint defendants and the University, the University is the sole assignee and rightful owner of the intellectual and tangible property rights to the Core Strawberry Germplasm and Transition Cultivars with the right to exclude others, 2) that CBC is not a *bona fide* purchaser for value of any rights in the Core Strawberry Germplasm or Transition Cultivars and any and all intellectual property rights related to that germplasm and to those cultivars.

24. As a result of the acts described in the foregoing paragraphs, there exists a substantial controversy of sufficient immediacy and reality to warrant the issuance of a declaratory judgment.

SECOND CAUSE OF ACTION FOR BREACH OF CONTRACT AGAINST SHAW AND LARSON

25. The University hereby realleges and incorporates by reference each and every allegation contained in paragraphs 1-24, inclusive, as though fully set forth herein.

26. Shaw and Larson signed valid contracts with the University as a condition of their employment. These contracts are attached to the Complaint as Exhibits A and B.

27. The University has performed its obligations under the contracts.

28. Shaw and Larson have breached the contracts through the following conduct:

- Not promptly furnishing the University with complete information regarding every possibly patentable plant that they conceived or developed while employed by the University of during the course or during the course of their use of University resources;
- Not executing the appropriate documents and doing other things necessary to assign to University all rights, title, and interest therein and to assist University in securing patent protection thereon; and
- Attempting to assign rights to CBC in possibly patentable plants that they conceived or developed while employed by the University of during the course or during the course of their use of University resources.

29. As a direct and proximate result of these breaches, the University has suffered and will continue to suffer harm for which the only remedy is specific performance.

THIRD CAUSE OF ACTION FOR BREACH OF IMPLIED CONTRACT AGAINST SHAW AND LARSON

30. The University hereby realleges and incorporates by reference each and every allegation contained in paragraphs 1-29, inclusive, as though fully set forth herein.

31. In addition to express contracts, an implied contract existed between Shaw and Larson on the one hand and the University on the other, as evidenced by University policies that govern the use and ownership of tangible research materials such as the Core Strawberry Germplasm and Transition Cultivars. On information and belief, both Shaw and Larson were aware of these policies including through letters from the University notifying them of these policies.

32. Shaw and Larson have breached this implied contract by asserting ownership over the Core Strawberry Germplasm and Transition Cultivars in contravention of University policies and purporting to assign to CBC rights in the Core Strawberry Germplasm and Transition Cultivars.

33. As a direct and proximate result of this breach, the University has suffered and will continue to suffer harm.

FOURTH CAUSE OF ACTION
FOR INFRINGEMENT OF U.S. PLANT PATENT NO. 20,552 AGAINST CBC

34. The University hereby realleges and incorporates by reference each and every allegation contained in paragraphs 1-33, inclusive, as though fully set forth herein.

35. CBC has infringed and continues to infringe PP'552 in violation of 35 U.S.C. § 163.

36. CBC's acts of infringement include direct infringement by using Portola in a manner for which it had neither license nor authorization.

37. As a result of CBC's infringement of PP'552, the University has suffered damages and will continue to suffer damages.

38. CBC will continue to infringe unless this Court enjoins CBC and its members agents, servants, employees, representatives, and all others acting in active concert with it from infringing PP'552.

FIFTH CAUSE OF ACTION
FOR INFRINGEMENT OF U.S. PLANT PATENT NO. 26,709 AGAINST CBC

39. The University hereby realleges and incorporates by reference each and every allegation contained in paragraphs 1-38, inclusive, as though fully set forth herein.

40. CBC has infringed and continues to infringe the University's provisional rights in PP'709 in violation of 35 U.S.C. §§ 154 and 163 and unless it changes its course of action will infringe PP'709 when it issues on May 10, 2016.

41. CBC's acts of infringement include direct infringement by using Fronteras in a manner for which it had neither license nor authorization.

42. As a result of CBC's infringement of PP'709, the University has suffered damages and will continue to suffer damages.

43. CBC will continue to infringe unless this Court enjoins CBC and its members agents, servants, employees, representatives, and all others acting in active concert with it from infringing PP'709.

SIXTH CAUSE OF ACTION FOR UNJUST ENRICHMENT AGAINST CBC

44. The University hereby realleges and incorporates by reference each and every allegation contained in paragraphs 1-43, inclusive, as though fully set forth herein.

45. The University through its contracts with Shaw and Larson and under University policy should be the sole assignee and rightful owner of the Core Strawberry Germplasm and Transition Cultivars.

46. CBC purports to have been assigned certain rights in the Core Strawberry Germplasm and Transition Cultivars.

47. Any benefit so received would harm the University in an unjust manner because, prior to the purported assignment of these rights, the University put CBC on actual and/or constructive notice that the University is the sole assignee and rightful owner of the Core Strawberry Germplasm and Transition Cultivars at least through 1) direct communications with CBC representatives, 2) direct communications with Shaw and Larson, whose knowledge can be imputed to CBC, and/or 3) recordation of assignments with the U.S. Patent and Trademark Office.

48. CBC would not be the beneficiary of the purported assignment absent its unjust actions.

SEVENTH CAUSE OF ACTION FOR TORTIOUS INTERFERENCE WITH A CONTRACT AGAINST CBC

49. The University hereby realleges and incorporates by reference each and every allegation contained in paragraphs 1-48, inclusive, as though fully set forth herein.

50. On information and belief, CBC has intentionally interfered with an express or implied contractual relationship between the University, on the one hand, and Shaw and/or Larson, on the other hand, through acts designed to induce breach or disruption of the University's express or implied contracts with Shaw and/or Larson.

51. CBC knew of the contractual relationship, and on information and belief, intended to disrupt the relationship by engaging in wrongful conduct, which disrupted the relationship and

harmed the University's economic interests by making performance more expensive or burdensome for the University.

52. On information and belief, CBC's wrongful conduct was a substantial factor in causing the University's harm.

EIGHTH CAUSE OF ACTION FOR INTENTIONAL INTERFERENCE WITH PROSPECTIVE ECONOMIC RELATIONS

53. The University hereby realleges and incorporates by reference each and every allegation contained in paragraphs 1-52, inclusive, as though fully set forth herein.

54. On information and belief, CBC has intentionally interfered with an economic relationship between the University, on the one hand, and the University's current and prospective licensees on the other hand, that would have resulted in an economic benefit to the University, ultimately damaging the University.

55. On information and belief, CBC knew of the relationship and intended to disrupt the relationship.

56. On information and belief, CBC has engaged in wrongful conduct (such as false and improper representations concerning ownership of the germplasm and the stewardship of the strawberry breeding program), which disrupted the relationship and harmed the University's economic interests.

57. On information and belief, CBC's wrongful conduct was a substantial factor in causing the University's harm.

NINTH CAUSE OF ACTION FOR NEGLIGENT INTERFERENCE WITH PROSPECTIVE ECONOMIC RELATIONS

58. The University hereby realleges and incorporates by reference each and every allegation contained in paragraphs 1-57, inclusive, as though fully set forth herein.

59. CBC at least negligently interfered with an economic relationship between the University, on the one hand, and the University's current and prospective licensees on the other hand, that would have resulted in an economic benefit to the University, ultimately damaging the University.

60. CBC knew or should have known of the relationship and knew or should have known that the relationship would be disrupted if CBC failed to act with reasonable care.

61. CBC failed to act with reasonable care, and on information and belief, has engaged in wrongful conduct (such as false and improper representations concerning ownership of the germplasm and the stewardship of the strawberry breeding program), which disrupted the relationship and harmed the University's economic interests.

62. On information and belief, CBC's wrongful conduct was a substantial factor in causing the University's harm.

TENTH CAUSE OF ACTION FOR UNFAIR COMPETITION AGAINST ALL DEFENDANTS

63. The University hereby realleges and incorporates by reference each and every allegation contained in paragraphs 1-62, inclusive, as though fully set forth herein.

64. The actions of Shaw and Larson in breaching express and/or implied contracts with the University constitute unlawful, unfair, and/or deceptive business acts or practices under California Business and Professions Code § 17200 *et seq*.

65. The actions of CBC in interfering with Shaw's and Larson's obligations to the University under their express or implied contracts and University policy constitute unlawful, unfair, and/or deceptive business acts or practices under California Business and Professions Code § 17200 *et seq*.

66. The University and the public at large were harmed as a proximate result of Cross-Complaint defendants' unlawful, unfair, and/or deceptive acts or practices.

PRAYER FOR RELIEF

WHEREFORE, the University prays for judgment as follows:

1. A declaration that (a) as between CBC, Shaw, and Larson on the one hand, and the University on the other, the University is the sole assignee and rightful owner of the intellectual and tangible property rights to the Core Strawberry Germplasm and Transition Cultivars with the right to exclude others; (b) CBC is not a *bona fide* purchaser for value of any rights in the Core Strawberry Germplasm or Transition

Cultivars; and (c) unlicensed use of the University's patented varieties for propagation (whether asexual/cloning or sexual/breeding) or benchmarking would constitute infringement;

2. Voiding of any purported assignment of rights in the Core Strawberry Germplasm and/or Transition Cultivars from Shaw and Larson to CBC;
3. A constructive trust for the transfer of any rights in the Core Strawberry Germplasm and Transition Cultivars and/or any plant descended or derived from them in any manner from CBC, Shaw, and/or Larson to the University;
4. An injunction forbidding CBC, Shaw, and Larson from (a) unlicensed use of the Core Strawberry Germplasm and Transition Cultivars, including propagation (asexual/cloning or sexual/breeding), and benchmarking; and (b) unlicensed making, using, propagating (whether asexually or sexually), selling, offering for sale, importing, or exporting Portola and Fronteras.
5. Damages of not less than a reasonable royalty for infringement of PP'552 and PP'709.
6. General and special damages in an amount to be proven at trial;
7. Attorney fees and costs of suit;
8. Such other and further relief as the Court may deem proper.

Dated: May 6, 2016

MORRISON & FOERSTER LLP

By: _____
Matthew A. Chivvis

Attorneys for Defendant
THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

PROOF OF SERVICE
California Berry Cultivars, LLC v. Regents of the Univ. of California
Case No. RG16813870

I declare that I am employed with the law firm of Morrison & Foerster LLP, whose address is 425 Market Street, San Francisco, California 94105-2482. I am not a party to the within cause, and I am over the age of eighteen years.

I further declare that on the date hereof, I served a copy of:

CROSS-COMPLAINT FOR DECLARATORY RELIEF; BREACH OF CONTRACT; BREACH OF IMPLIED CONTRACT; PATENT INFRINGEMENT; UNJUST ENRICHMENT; INTENTIONAL INTERFERENCE; UNFAIR COMPETITION; BREACH OF IMPLIED COVENANT

☒ **BY OVERNIGHT DELIVERY [Code Civ. Proc sec. 1013(c)]** by placing a true copy thereof enclosed in a sealed envelope with delivery fees provided for, addressed as follows, for collection by UPS, at 425 Market Street, San Francisco, California 94105-2482 in accordance with Morrison & Foerster LLP's ordinary business practices.

I am readily familiar with Morrison & Foerster LLP's practice for collection and processing of correspondence for overnight delivery and know that in the ordinary course of Morrison & Foerster LLP's business practice the document(s) described above will be deposited in a box or other facility regularly maintained by UPS or delivered to an authorized courier or driver authorized by UPS to receive documents on the same date that it (they) is (are) placed at Morrison & Foerster LLP for collection.

☒ **BY ELECTRONIC SERVICE [Code Civ. Proc sec. 1010.6]** by electronically mailing a true and correct copy through Morrison & Foerster LLP's electronic mail system to the e-mail address(s) set forth below, or as stated on the attached service list per agreement in accordance with Code of Civil Procedure section 1010.6.

RECIPIENT	METHOD
Rick L. McKnight Alexis Adian Smith JONES DAY 555 South Flower Street, 50th Floor Los Angeles, CA 90071-2300 Telephone: (213) 489-3939 Facsimile: (213) 243-2539 Email: fmcknight@jonesday.com Email: asmith@jonesday.com *Attorneys for Plaintiff, California Berry Cultivars, LLC*	_____ Facsimile _____ U.S. Mail __X__ Overnight _____ Personal __X__ Electronic

RECIPIENT	METHOD
Gregory L. Lippetz JONES DAY 1755 Embarcadero Road Palo Alto, CA 94303 Telephone: (650) 739-3939 Facsimile: (650) 739-3900 Email: glippetz@jonesday.com *Attorneys for Plaintiff,* *California Berry Cultivars, LLC*	_____ Facsimile _____ U.S. Mail __X__ Overnight _____ Personal __X__ Electronic

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed at San Francisco, California, this 6th day of May, 2016.

Gina L. Gerrish
(typed)

Gina L. Gerrish
(signature)

EXHIBIT 1

US00PP20552P3

(12) United States Plant Patent

Shaw et al.

(10) Patent No.: US PP20,552 P3
(45) Date of Patent: Dec. 15, 2009

(54) **STRAWBERRY PLANT NAMED 'PORTOLA'**

(50) Latin Name: *Fragaria×ananassa*
Varietal Denomination: **Portola**

(75) Inventors: **Douglas V. Shaw**, Davis, CA (US); **Kirk D. Larson**, Irvine, CA (US)

(73) Assignee: **The Regents of the University of California**, Oakland, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 134 days.

(21) Appl. No.: **11/983,159**

(22) Filed: **Nov. 6, 2007**

(65) **Prior Publication Data**

US 2009/0144866 P1 Jun. 4, 2009

(51) **Int. Cl.**
A01H 5/00 (2006.01)

(52) **U.S. Cl.** **Plt./209**

(58) **Field of Classification Search** Plt./209, Plt./208

See application file for complete search history.

Primary Examiner—Susan B McCormick Ewoldt

(74) *Attorney, Agent, or Firm*—Townsend and Townsend and Crew LLP

(57) **ABSTRACT**

This invention relates to a new and distinctive day-neutral type strawberry designated as 'Portola'.'Portola' is a day-neutral (everbearing) cultivar similar to 'Diamante' (U.S. Plant Pat. No. 13,079) but with higher yield and better quality fruit, better disease resistance and better flavor; it is similar to 'Albion' (U.S. Plant Pat. No. 16,228) for fruit quality but with higher yield, and larger and lighter colored fruit.

3 Drawing Sheets

Genus and species: The strawberry cultivar of this invention is botanically identified as *Fragaria×ananassa* Duch.

Variety denomination: The variety denomination is 'Portola'.

BACKGROUND OF THE INVENTION

This invention relates to a new and distinctive day-neutral type cultivar designated as 'Portola', which resulted from a cross performed in 2001 between advance selections Cal 97.93-7 and Cal 97.209-1. 'Portola' was first fruited near Winters, Calif. in 2002, where it was selected, originally designated Cal 1.206-5, and propagated asexually by runners. Following selection and during testing the plant of this selection was designated 'CN224' and, later for introduction into commerce, 'Portola'. Asexual propagules from this original source have been tested at a Watsonville strawberry research facility, an Irvine, Calif. research station, and to a limited extent in grower fields starting in 2005.

BRIEF SUMMARY OF THE INVENTION

'Portola' is a day-neutral (everbearing) cultivar similar to 'Diamante' (U.S. Plant. Pat. No. 10,435) but with higher yield and better quality fruit, better disease resistance and better flavor; it is similar to 'Albion' (U.S. Plant Pat. No. 16,228) for fruit quality but with higher yield, and larger and lighter colored fruit.

BRIEF DESCRIPTION OF THE DRAWINGS

The figures depict various characteristics of the 'Portola' cultivar.

FIG. **1** shows the general flowering and fruiting characteristics of the plant in a field planting.

FIG. **2** shows a typical leaf at mid-season.

FIG. **3** shows a representative mid-season fruit.

DETAILED DESCRIPTION OF THE INVENTION

'Portola' is typical of day-neutral strawberry cultivars and produces fruit regardless of day length when treated appropriately in arid, subtropical climates. 'Portola' is moderate to strong in expressing the day-neutral character, being stronger in flowering response to 'Diamante' (U.S. Plant Pat. No. 10,435) and Albion (U.S. Plant Pat. No. 16,228), and more similar in flowering to 'Fern' (U.S. Plant Pat. No. 5,267) or 'Irvine' (U.S. Plant Pat. No. 7,172). The production pattern for 'Portola' is similar to that for 'Albion', although it is earlier to initiate production. 'Portola' fruit is of more uniform size than parent Cal 97.209.1. 'Portola' has firmer fruit and more evenly shaped fruit compared to Cal 97.93-7. 'Portola' will be of special interest for winter plantings and in summer plantings where 'Diamante' and 'Albion' have been successful. It is expected to perform especially well in spring and summer planting systems aimed at fall fruit production.

Plants and foliage: Fruiting plants of 'Portola' are similar in morphology to 'Diamante' and 'Albion' although somewhat larger throughout the season; 'Portola' plants are similar in size to plants of 'Aromas' but more dense. Comparative statistics for foliar characters near mid-season are given for 'Portola' and the three comparison cultivars in Table 1. Individual leaflets for 'Portola' are similar in shape and size to the comparison cultivars. Leaves (including petioles) for 'Portola' are longer than those for 'Diamante' and 'Albion', mostly due to greater petiole length. Petioles are generally thinner than those of the comparison cultivars and tend to have heavy pubescence. The adaxial (upper) and abaxial (lower) surfaces of leaves for 'Portola' are similar in color to the comparison cultivars at mid season, but slightly lighter early in the season. Leaves of 'Portola' have similar concavity to 'Aromas', 'Diamante', and 'Albion'.

Disease and pest reaction: 'Portola' is moderately resistant to powdery mildew (*Sphaerotheca macularis*), Anthracnose crown rot (*Colletotrichum acutatum*), and *Verticillium* wilt (*Verticillium dahliae*); it is very resistant to *Phytophthora* crown rot (*Phytophthora cactorum*) and common leaf spot (*Ramularia tulasnei*) (Table 3). When treated properly, it has tolerance to two-spotted spider mites (*Tetranychus urticae*) equal to that for the comparison cultivars. 'Portola' is tolerant to strawberry viruses encountered in California.

TABLE 1

Foliar and plant characteristics for 'Portola', 'Aromas', 'Diamante', and 'Albion'.

	Cultivar			
Foliar Character	'Aromas'	'Diamante'	'Albion'	'Portola'
Plant height (mm)				
mean	272	220	223	267
range	240-300	190-240	170-290	240-300
Plant spread (mm)				
mean	323	316	295	313
range	300-360	265-385	270-315	295-335
Midtier leaflet Length (mm)				
mean	79	78	70	71
range	70-90	60-90	60-80	65-80
Width (mm)				
mean	74	77	68	69
range	70-80	55-90	60-80	60-90
Midtier leaf Length (mm)				
mean	113	99	99	107
range	100-120	80-120	90-110	100-120
Width (mm)				
mean	135	134	122	136
range	120-150	90-150	105-135	120-150
Leaf components Petiole length (mm)				
mean	174	114	122	159
range	140-210	100-130	95-180	110-215
Petiole diameter (mm)				
mean	4.5	5.2	4.9	3.9
range	4-6	4-7	4-6	3-5
Petiolule length (mm)				
mean	6.6	5.2	6.7	7.0
range	4.3-7.5	4.0-7.6	5.0-8.0	5-8
# leaflets/leaf	3	3	3	3
Leaf convexity	some flat, most slight concave	some flat, most slight concave	some flat, most slight concave	some flat, most slight concave
Serrations				
number/leaf	19.9	20.2	23.3	24.4
range	16-24	16-24	21-27	21-28
shape	rounded to semi-pointed	rounded to semi-pointed	semi-pointed	most rounded, some semi-pointed

TABLE 1-continued

Foliar and plant characteristics for 'Portola', 'Aromas', 'Diamante', and 'Albion'.

	Cultivar			
Foliar Character	'Aromas'	'Diamante'	'Albion'	'Portola'
Leaf pubescence	moderate	moderate-heavy	moderate	heavy
Petiole pubescence density	Moderate-heavy	heavy	heavy	heavy
direction	per-pendicular	per-pendicular	per-pendicular	per-pendicular
Petiole color (Munsell)	5 GY 8/8	7.5 GY 9/4	5 GY 8/8	5 GY 8/8
Stipule length (mm)				
mean	34.2	31.6	32.5	33.4
range	30-39	22-36	24-37	29-40
Stipule color				
core	7.5 GY 8/7	7.5 GY 8/7	5 GY 8/7	2.5 GY 8/9
margins	2.5 GY 9/3	5 GY 6/8	5 GY 6/8	5 GY 7/10
Stolon base diameter (mm)	3.0	3.2	3.0	3.2
Stolons per nursery mother plant	33.0	29.0	26.9	32.0
Venation				
pattern	pinnate	pinnate	pinnate	pinnate
color	2.5 GY 5/5	10 GY 5/5	2.5 GY 6/8	10 Y 6/7

Flowering, fruiting, fruit, and production characteristics: 'Portola' is similar to other California day-neutral cultivars (e.g., 'Diamante' and 'Albion') in that it will flower independently of day length, given appropriate temperature and horticultural conditions. Comparative statistics for flower and fruit characters near mid-season are given for 'Portola' and three other cultivars in Table 4. The primary flowers for 'Portola' are slightly larger than those of the 'Aromas' and 'Diamante' but smaller than those of 'Albion'. The calyx for 'Portola' is distinctly larger than the corolla on primary fruit; the sepals are similar in length and shape to those of the comparison cultivars. The calyx for 'Portola' varies in position but is usually less reflexed than for 'Aromas' or 'Diamante', much less than that of 'Albion'. The fruit shape for 'Portola' can vary but is typically a medium to short and highly symmetrical conic. It is easily distinguished by fruit shape from 'Aromas' (shortened and rounded conic), 'Diamante' (usually a flat conic) or 'Albion' (long conic); 'Portola' usually has a greater proportion of symmetrical fruit than the comparison cultivars, especially early in the fruiting season. External fruit color for 'Portola' is slightly lighter than 'Aromas' or 'Albion', distinctly darker than for 'Diamante'; internal color is somewhat darker with greater red pigment than for the comparison cultivars (Table 2). Achenes vary from yellow to dark red, but are usually red, and range from even with the fruit surface to slightly indented.

'Portola' has been tested under a variety of cultural regimes, and optimal performance is obtained when nursery treatments and nutritional programs similar to those for 'Albion', 'Diamante', and 'Aromas' are used. In general, 'Portola' is more vigorous than the comparison cultivars and is less sensitive to low chilling. 'Portola' is distinctly stronger in day-neutrality than the comparison cultivars and produces

greater quantities of fruit when established with spring or summer plantings of long-term cold stored plant material. 'Portola' retains excellent fruit quality in summer planting systems.

When treated with appropriate planting regimes, 'Portola' has larger fruit and produces greater individual-plant yield than any of the comparison cultivars (Table 5). 'Portola' has a similar production pattern to 'Albion' with most cultural treatments, although it is substantially more adapted to early-season winter planting. Commercial appearance ratings have been similar to or higher than those for all of the comparison cultivars, especially 'Aromas'; these superior appearance scores translate directly into a larger fraction of marketable fruit than is produced by the comparison cultivars. Fruit for 'Portola' is substantially firmer than fruit from 'Aromas', similar in firmness to the other comparison cultivars. Subjectively, 'Portola' has outstanding flavor. The fruit will be exceptional for both fresh market and processing, and will be useful for home garden purposes.

TABLE 2

Foliar and fruit color characteristics for 'Portola' and three comparison cultivars.

Color Character	Cultivar 'Aromas'	'Diamante'	'Albion'	'Portola'
Leaf color (CIELAB) Adaxial				
L*				
mean	35.1	34.8	34.7	34.3
range	32.7-37.7	32.6-36.8	32.8-36.7	31.6-35.5
a*				
mean	−10.6	−10.4	−9.8	−9.8
range	−8.2--14.0	−8.7--11.9	−9.4--11.3	−8.0--11.5
b*				
mean	13.8	13.8	12.8	13.1
range	11.2-18.1	12.2-16.6	10.7-15.6	11.0-15.7
Munsell	7.5 GY 4/4	5 GY 4/3	5 GY 4/3	5 GY 4/3
Abaxial				
L*				
mean	52.4	51.1	50.6	52.4
range	50.6-54.1	49.7-52.2	43.7-53.1	51.5-54.1
a*				
mean	−11.6	−12.8	−12.4	−11.6
range	−10.7--13.6	−11.6--14.9	−8.6--11.4	−10.3--13.6
b*				
mean	17.3	19.5	17.2	17.3
range	14.3-23.2	15.3-23.5	14.5-19.6	15.9-23.2
Munsell	10 GY 7/8	7.5 GY 6/8	7.5 GY 8/7	10 GY 7/8
Fruit color (CIELAB) External				
L*				
mean	34.2	40.8	36.5	34.3
range	31.2-38.3	35.5-45.4	32.8-40.1	31.4-37.2
a*				
mean	33.9	36.7	33.3	35.7
range	31.5-38.6	35.6-40.2	28.3-36.2	31.0-39.9
b*				
mean	14.1	21.2	17.6	15.9
range	9.1-16.5	18.8-25.7	12.2-24.9	13.4-20.6

TABLE 2-continued

Foliar and fruit color characteristics for 'Portola' and three comparison cultivars.

Color Character	Cultivar 'Aromas'	'Diamante'	'Albion'	'Portola'
Munsell	2.5 R 4/10	5 R 5/13	5 R 3/7	5 R 4/12
Internal				
L*				
mean	61.6	65.6	57.9	50.9
range	59.5-67.7	58.8-67.2	43.3-62.9	45.2-56.7
a*				
mean	14.7	5.6	19.0	30.4
range	7.6-19.2	3.0-9.5	7.9-27.7	24.2-36.6
b*				
mean	20.2	15.8	21.0	28.0
range	16.1-22.5	14.5-18.2	13.2-27.2	23.7-31.4
Munsell	5 R 6/11	10 R 7/9	7.5 R 4/11	7.5 R 5/13
Achene color	7.5 R 4/11	7.5 R 4/11	10 R 5/6	10 R 4/9
Munsell				

*CIELAB is the abbreviation of the international color system known as "Commission Internationale De L'Eclairage" 1978. For recommendations concerning uniform color spaces, color difference equations, and psychometric color terms see Supplement No. 2 of CIE Publication No. 15, Paris.

TABLE 3

Disease resistance scores for 'Portola' and three comparison cultivars; *Phytophthora* and *Verticillium* scores were obtained in evaluations conducted in 2004-2006, *Colletotrichum* was evaluated in 2005-2006.

Genotype	*Phytophthora* Resistance Score (5 = best)	*Verticillium* Resistance Score (5 = best)	*Colletotrichum* Resistance Score (5 = best)
'Aromas'	4.0	4.5	2.4
'Diamante'	2.0	2.8	2.6
'Albion'	4.3	3.8	3.1
'Portola'	4.4	3.3	2.6

TABLE 4

Flower and fruit characters for 'Portola' and three comparison cultivars.

Character	Cultivar 'Aromas'	'Diamante'	'Albion'	'Portola'
Petal number				
mean	5.5	5.4	5.6	6.8
range	5-7	5-6	5-7	5-8
Petal shape				
apex	truncate to slightly obtuse	truncate to slightly obtuse	truncate to slightly obtuse	truncate to slightly obtuse
base	attenuate	attenuate	attenuate	attenuate
margin	entire	entire	entire	entire
Petal length (mm)				
mean	10.1	9.2	9.6	11.1
range	8-11	7-13	8-11	8-13
Petal width (mm)				
mean	11.8	10.6	9.0	12.4
range	10-13	10-13	7-10	9-14

TABLE 4-continued

Flower and fruit characters for 'Portola' and three comparison cultivars.

Character	Cultivar 'Aromas'	'Diamante'	'Albion'	'Portola'
Flower position (relative to foliage)	most even some exposed	most even some internal and exposed	most exposed, some even	most exposed, some even
Calyx diam. (mm)				
mean	31.3	32.0	37.5	36.0
range	28-33	25-41	31-48	31-42
Corolla diam. (mm)				
mean	31.2	23.9	27.8	32.2
range	26-35	18-31	23-33	24-39
Sepal length (mm)				
mean	12.3	12.1	14.1	12.5
range	8-15	10-15	11-18	9-15
Sepal width (mm)				
mean	6.4	6.7	6.6	7.3
range	3-9	5-9	4-10	5-9
Sepal color (Munsell)	7.5 GY 6/8	5 GY 5/6	2.5 GY 6/8	5 GY 5/6
Pedicel length (mm)				
mean	172	140	218	225
range	112-230	110-165	180-270	200-240
Pedicel diameter (mm)				
mean	4.4	5.3	3.1	4.3
range	4-6	4-6	2-4	3-6
Pedicel color	5 GY 6/8	5 GY 7/10	5 GY 6/8	5 GY 6/8
Fruit shape				
Fruit length (mm)				
mean	46.6	46.4	61.7	50.4
range	42-52	39-50	50-76	43-57
Fruit width (mm)				
mean	39.4	40.7	46.6	47.7
range	37-43	38-46	37-52	43-54
Length/width				
ratio	1.2	1.1	1.3	1.1
range	1.0-1.4	1.0-1.2	1.2-1.5	1.0-1.2
subjective	mostly medium to short flat conic	rounded to flat conic	most long symmetrical conic	Medium-short symmetrical conic

TABLE 4-continued

Flower and fruit characters for 'Portola' and three comparison cultivars.

Character	Cultivar 'Aromas'	'Diamante'	'Albion'	'Portola'
Primary/secondary fruit comparison				
size (subjective)	60-80%	60-80%	60-70%	75-85%
shape	similar shape	similar shape	similar shape	similar shape
Extent/size of hollow core	small-absent	small-absent	small-medium	small-medium
Calyx				
position	indented-even with neck	even-indented	even-reflexed	even-indented
size relative to fruit	equal or greater than fruit diameter	equal or greater than fruit diameter	equal or greater than fruit diameter	equal or greater than fruit diameter
Seed position	indented-extruded	indented-even	indented-extruded	indented-even
Adherence of Calyx to Fruit	inter-mediate	inter-mediate	inter-mediate	inter-mediate

Flower measurements and fruit measurements obtained May 9–Jun. 6, 2006, subjective observations obtained Jul. 31, 2006.

TABLE 5

Performance 'Portola' and three comparison cultivars evaluated at the Watsonville Research Facility in 2005-7. All plants for these trials were harvested from a commercial nursery near Macdoel, CA on October 15-16, and transplanted after 18-21 days supplemental storage. Fruit harvest was initiated in early April and continued through the first week of October. (52" 2-row beds, 17,300 plants/acre).

Item	Yield (g/plant)	Appearance Score (5 = best)	Fruit Size (g/fruit)	Firmness
'Aromas'	3,108	3.1	27.0	9.6
'Diamante'	2,653	3.5	31.2	11.0
'Albion'	2,461	3.9	30.5	11.1
'Portola'	3,336	3.6	32.0	10.2

What is claimed is:

1. A new and distinct cultivar of strawberry plant having the characteristics substantially as described and illustrated herein.

* * * * *

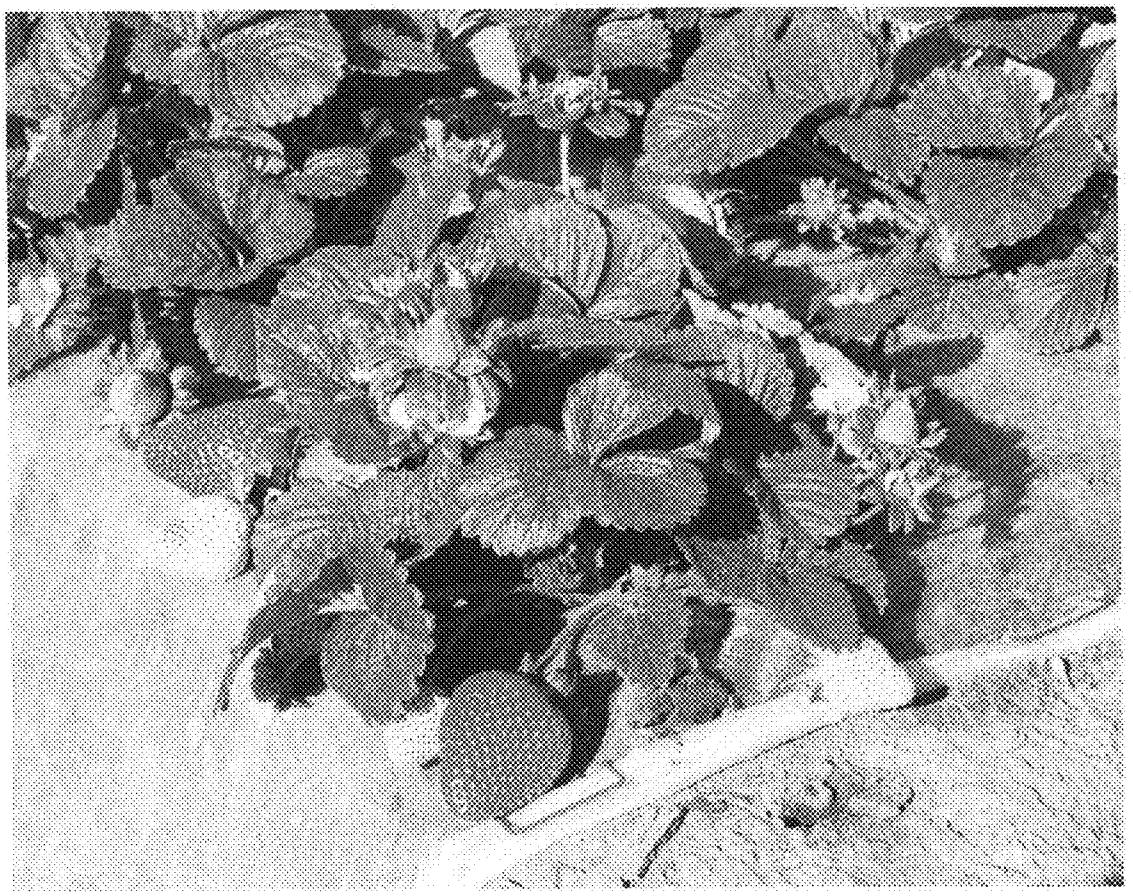

FIG. 1

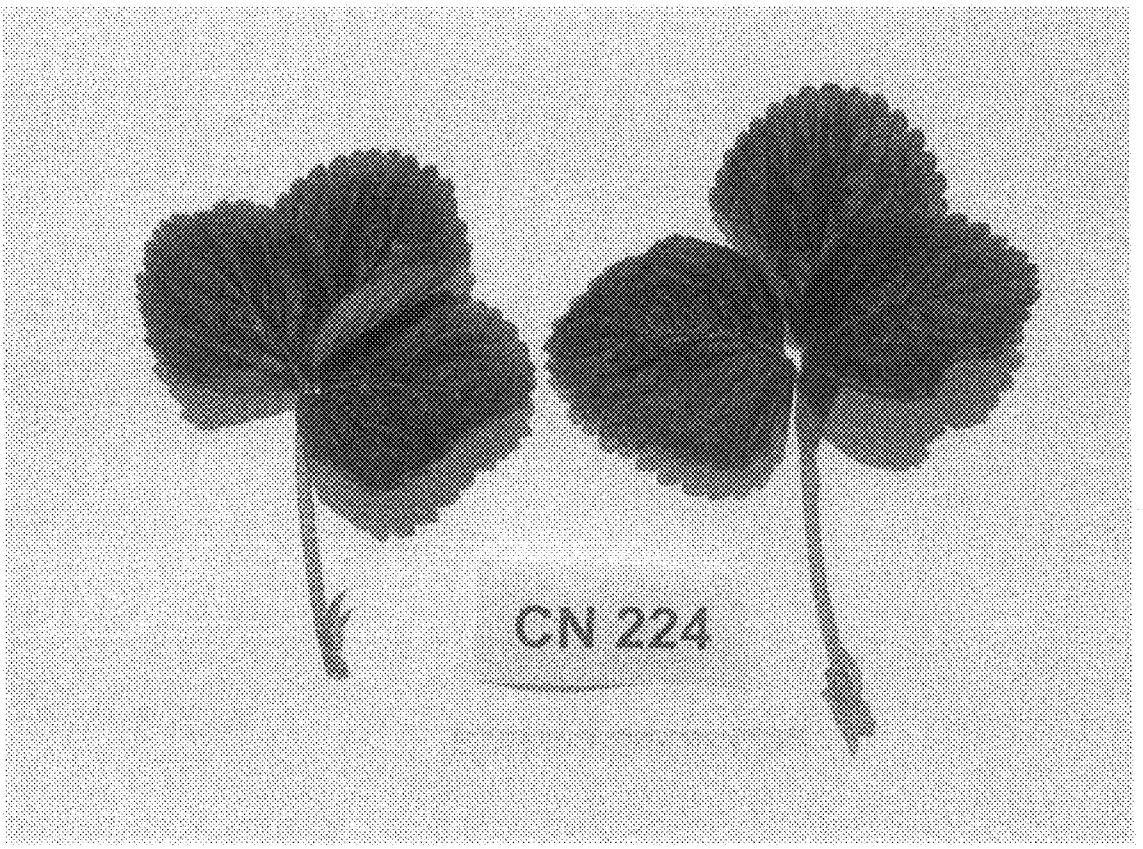

FIG. 2

FIG. 3

EXHIBIT 2

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(54) **STRAWBERRY PLANT NAMED 'FRONTERAS'**

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A01H 5/00 (2006.01)

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USPC **PLT/208**

(57) **ABSTRACT**

'Fronteras' is a short-day (June bearing) cultivar similar to 'Camarosa' (U.S. Plant Pat. No. 8,708), but with greater productivity, higher quality fruit, and earlier production; it is similar to 'Ventana' (U.S. Plant Pat. No. 13,469) and 'Benicia' (U.S. Plant Pat. No. 22,542), but with somewhat later production, a larger plant, superior fruit and quality, and better-flavored fruit.

GENUS AND SPECIES

[0001] The strawberry cultivar of this invention is botanically identified as *Fragaria×ananassa* Duch.

VARIETY DENOMINATION

[0002] The variety denomination is 'Fronteras'.

BACKGROUND OF THE INVENTION

[0003] This invention relates to a new and distinctive short-day type cultivar designated as 'Fronteras', which resulted from a cross performed in 2008 between two unreleased germplasm accessions Cal 4.18-4 and Cal 5.165-1. Accession Cal 4.18-4 was chosen as a parent due to its very high early productivity, large and high quality fruit, and moderate plant vigor. Accession Cal 5.165-1 was chosen as a parent due to its vigorous but open plant habit and firm, large and flavorful fruit, and extended productivity.

[0004] 'Fronteras' was first fruited at the University of California South Coast Research and Extension Center, near Irvine, Calif. in 2009, where it was selected, originally designated Cal 8.132-608, and propagated asexually by runners. Following selection and during testing the plant of this selection was designated 'C235'. With the decision that this plant was to be released, this plant was given the name 'Fronteras' for purposes of introduction into commerce and for international registration and recognition. Asexual propagules from this original source have been tested at the Watsonville Strawberry Research Facility, the South Coast Research and

[0005] Extension Center, and to a limited extent in grower fields starting in 2010. The cultivar is stable and reproduces true to type in successive generations of asexual reproduction.

BRIEF SUMMARY OF THE INVENTION

[0006] 'Fronteras' is a short-day (June bearing) cultivar similar to 'Camarosa' (U.S. Plant Pat. No. 8,708), but with greater productivity, higher quality fruit, and earlier production; it is similar to 'Ventana' (U.S. Plant Pat. No. 13,469) and 'Benicia' (U.S. Plant Pat. No. 22,542), but with somewhat later production, a larger plant, superior fruit and quality, and better-flavored fruit.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] The Figures depict various characteristics of the 'Fronteras' cultivar.

[0008] FIG. **1** shows the general flowering and fruiting characteristics of the plant in a field planting.

[0009] FIG. **2** shows a typical leaf at mid-season.

[0010] FIG. **3** shows representative mid-season fruit.

DETAILED DESCRIPTION OF THE INVENTION

[0011] 'Fronteras' is typical of short-day strawberry cultivars and produces fruit over an extended period when treated appropriately in arid, subtropical climates. The production pattern for 'Fronteras' is similar to that for 'Camarosa' (U.S. Plant Pat. No. 8,708), although it is slightly earlier to initiate fruiting with most cultural treatments. 'Fronteras' initiates fruiting slightly later than

[0012] 'Ventana' (U.S. Plant Pat. No. 13,469) and 'Benicia' (U.S. Plant Pat. No. 22,542) when established in very early fall. 'Fronteras' will be of special interest for winter plantings, where 'Camarosa', 'Ventana', and 'Benicia' have been successful, and in summer plantings where 'Chandler' (U.S. Plant Pat. No. 5,262) and 'Camino Real' (U.S. Plant Pat. No. 13,079) have been successful.

Plants and Foliage:

[0013] Fruiting plants of 'Fronteras' are slightly taller, more erect, and more open than all of the comparison cultivars in most production environments. Comparative statistics for foliar characters near mid-season are given for 'Fronteras' and three comparison cultivars in Table 1. Individual leaflets for 'Fronteras' are to those of the comparison cultivars, and are more elongated than for 'Benicia'. Leaves (including petioles) for 'Fronteras' are slightly longer than for

[0014] 'Ventana' and 'Camarosa', shorter than for 'Benicia'. Petioles for 'Fronteras' are generally longer than those of 'Ventana', 'Benicia' and 'Camarosa'. The adaxial (upper) and abaxial (lower) surfaces of leaves for 'Fronteras' are lighter than for 'Camarosa' and 'Benicia', darker and less yellow than for 'Ventana' leaves at midseason. Leaves of 'Fronteras' have similar concavity to 'Camarosa', and are less concave those for 'Ventana'. Serrations at midseason are less pointed than for 'Ventana', similar in shape and number to 'Benicia' and 'Camarosa'. The stipule length is somewhat longer for 'Fronteras' than for the comparison cultivars.

TABLE 1

Foliar and plant characteristics for 'Fronteras', 'Camarosa', 'Ventana', and 'Benicia'.

	Cultivar			
Foliar Character	'Camarosa'	'Ventana'	'Benicia'	'Fronteras'
Plant height (mm)				
mean	227	277	245	313
range	190-320	250-300	220-260	300-330
Plant spread (mm)				
mean	368	425	414	421
range	300-465	375-525	360-500	345-485
Mid-tier leaflet				
Length (mm)				
mean	85	89	80	83
range	70-95	80-110	70-90	80-90
Width (mm)				
mean	79	77	80	73
range	65-90	70-90	75-80	60-90
Mid-tier leaf				
Length (mm)				
mean	230	231	264	247
range	200-290	180-260	220-310	200-280
Width (mm)				
mean	143	153	161	141
range	120-170	140-160	150-180	120-160
Leaf components				
Petiole length (mm)				
mean	110	113	136	141
range	90-150	80-120	110-160	110-160
Petiole diameter (mm)				
mean	3.6	5.3	4.9	4.6
range	3-4	4-7	4-6	4-5
Petiolule length (mm)				
mean	5.1	6.9	5.3	5.7
range	4-6	6-8	4-6	4-7
#leaflets/leaf	3	3	3, rarely 4 or 5	3
Leaf convexity	most flat to slight concave	flat to very concave	flat to concave	flat to concave
Serrations				
number/leaf	20.8	20.6	20.5	20.1
range	19-23	18-25	18-23	18-22
shape	semi-pointed	semi-pointed	round to semi-pointed	round to semi-pointed
Leaf pubescence	light-moderate	moderate-heavy	moderate-light	moderate
Petiole pubescence				
density	heavy	moderate-heavy	heavy	moderate-heavy
direction	perpendicular	perpendicular to acropetal	perpendicular	perpendicular to acropetal
Petiole color (Munsell)	2.5 GY 8/9	7.5 GY 9/4	7.5 GY 8/10	2.5 GY 7/10
Stipule length (mm)				
mean	27.2	24.0	31.1	37.5
range	20-34	20-30	25-40	30-40
Stipule color				
core	2.5 Y 6/8	2.5 GY 8/9	2.5 Y 9/4	7.5 GY 8/7
margins	7.5 Y 6/7	5 GY 8/8	5 GY 8/8	5 GY 8/8
Stolon base diameter (mm)	11.7	15.2	16.5	13.2
Stolons per nursery mother plant	22.7	18.8	22.9	23.0
Venation				
pattern	pinnate	pinnate	pinnate	pinnate
color	7.5 GY 8/7	7.5 GY 9/4	7.5 GY 8/7	2.5 GY 9/8

Disease and Pest Reaction:

[0015] 'Fronteras' is moderately resistant to powdery mildew (*Sphaerotheca macularis*), moderately susceptible to Anthracnose crown rot (*Colletotrichum acutatum*), and moderately resistant to Verticillium wilt (*Verticillium dahliae*), Phytophthora crown rot (*Phytophthora cactorum*) and common leaf spot (*Ramularia tulasnei*) (Table 2). When treated properly, it has tolerance to two-spotted spider mites (*Tetranychus urticae*) equal to that for the comparison cultivars. 'Fronteras' is tolerant to strawberry viruses encountered in California.

TABLE 2

Disease resistance scores for 'Fronteras' and three comparison cultivars; all scores were obtained in evaluations conducted in 2012-2013.

Genotype	*Phytophthora* Resistance Score (5 = best)	*Verticillium* Resistance Score (5 = best)	*Colletotrichum* Resistance Score (5 = best)
'Cam arosa'	3.6	2.8	2.3
'Ventana'	2.1	2.9	3.0
'Benicia'	3.5	1.6	2.5
'Fronteras'	4.1	3.7	2.5

Flowering, Fruiting, Fruit, and Production Characteristics:

[0016] 'Fronteras' is similar to other California short-day strawberry cultivars (e. g. 'Ventana', 'Camarosa', and 'Benicia') in that it will flower over an extended period and into spring or summer, given appropriate local temperature and horticultural conditions. With most planting treatments 'Fronteras' produces fruit slightly later than 'Ventana' and 'Benicia' and earlier than for

[0017] 'Camarosa'. Comparative statistics for flower and fruit characters near mid-season are given for the four cultivars in Table 4. The primary flowers for 'Fronteras' are slightly larger than for 'Camarosa' but smaller than 'Ventana' and 'Benicia' with a calyx that is distinctly larger than the corolla on primary fruit. The calyx for 'Fronteras' varies in position but frequently has a slight indent early in the season and is even with the fruit later in the season; each primary flower has 5-7 petals, similar to the comparison cultivars on average. The fruit shape for 'Fronteras' is consistent throughout the season, and is typically medium to long conic, with a tendency to be somewhat cylindrical and blunt. It is easily distinguished by fruit shape from 'Camarosa' (shortened and flattened conic), or 'Ventana' (medium symmetrical conic), and 'Benicia' (often flattened). Fruit size for 'Fronteras' is substantially larger than for the comparison cultivars.

[0018] External fruit color for 'Fronteras' is similar to that for 'Camarosa', lighter than for 'Benicia', and darker than for 'Ventana'; internal color for 'Fronteras' is somewhat lighter than for the comparison cultivars (Table 3). Achenes vary from yellow to dark red, and are even with the fruit surface or slightly indented.

TABLE 3

Foliar and fruit color characteristics for 'Fronteras' and three comparison cultivars.

	Cultivar			
Color Character	'Camarosa'	'Ventana'	'Benicia'	'Fronteras'
Leaf color (CIELAB) Adaxial L*				
mean	38.3	39.2	35.0	38.3
range	37.3-39.8	36.0-41.1	33.3-36.4	34.8-41.1
a*				
mean	−12.2	−14.3	−11.7	−13.0
range	−9.5--15.5	−12.9--16.7	−10.3--13.5	−11.3--15.6
b*				
mean	16.9	20.6	16.9	18.7
range	13.3-19.9	17.3-24.8	13.1-21.7	13.8-22.6
Munsell	5 GY 5/5	2.5 GY 6/8	5 GY 5/6	5 GY 4/3
Abaxial L*				
mean	52.5	53.2	48.5	48.9
range	51.3-54.6	51.8-54.6	41.7-52.3	40.2-51.2
a*				
mean	−13.1	−14.2	−13.5	−14.1
range	−11.4--14.9	−13.9--14.7	−11.9--16.8	−13.0--15.1
b*				
mean	20.5	21.7	20.0	21.4
range	18.9-22.4	20.3-23.3	17.9-21.9	20.0-21.9
Munsell	7.5 GY 8/7	10 GY 8/7	7.5 GY 5/7	10 GY 7/8
Fruit color (CIELAB) External L*				
mean	38.6	38.1	36.0	36.9
range	34.7-42.7	37.6-39.0	34.2-37.5	35.5-37.3
a*				
mean	34.4	33.4	31.2	37.3
range	33.6-36.2	29.4-38.7	26.6-36.3	35.1-39.9
b*				
mean	22.5	19.2	14.2	19.2
range	18.8-29.3	17.8-21.1	10.6-17.3	16.7-19.0
Munsell	7.5 R 4/11	5 R 4/12	2.5 R 4/0	7.5 R 4/11
Internal L*				
mean	50.2	48.6	44.0	55.7
range	46.6-53.3	46.2-52.3	40.8-47.0	50.4-60.4
a*				
mean	30.8	28.9	30.9	20.9
range	25.6-35.4	23.5-33.0	27.8-33.6	18.1-25.9
b*				
mean	30.1	31.3	27.5	25.4
range	28.0-32.0	30.6-32.5	24.6-28.8	19.6-30.7
Munsell	7.5 R 5/13	7.5 R 6/13	5 R 4/2	7.5 R 5/3
Achene color Munsell	2.5 Y 7/10	10 Y 8/11	5 R 3/7	2.5 R 8/12

TABLE 4

Flower and fruit characters for 'Fronteras' and three comparison cultivars.

Character	Cultivar 'Camarosa'	'Ventana'	'Benicia'	'Fronteras'
Petal number				
mean	5.8	6.2	6.1	5.9
range	5-7	5-7	5-7	5-7
Petal shape				
apex	truncate to slightly	truncate to slightly	truncate to slightly	truncate to
base	obtuse	obtuse	obtuse	obtuse
margin	attenuate	attenuate	attenuate	attenuate
entire	entire	entire	entire	
Petal length (mm)				
mean	11.5	13.3	11.7	13.5
range	10-13	11-15	8-13	13-15
Petal width (mm)				
mean	12.0	14.6	14.4	12.6
range	10-14	13-16	8-13	8-14
Flower position	most even	even to	even to	most even
(relative to foliage)	some	exposed	exposed	some
exposed	interior			
Calyx diam.(mm)				
mean	40.4	47.0	50.8	48.3
range	33-47	40-50	47-53	44-54
Corolla diam.(mm)				
mean	26.1	39.0	39.6	31.3
range	23-31	35-45	39-41	29-38
Sepal length (mm)				
mean	14.3	16.6	16.4	14.6
range	12-18	14-19	13-20	11-17
Sepal width (mm)				
mean	8.3	8.4	8.4	9.3
range	7-10	7-10	7-10	7-11
Sepal color (Munsell)	5 GY 7/10	5 GY 5/5	10 GY 8/7	5 GY 5/6
Pedicel length (mm)				
mean	155	115	183	125
range	130-180	90-140	150-210	90-170
Pedicel diameter (mm)				
mean	2.7	3.5	3.7	4.7
range	2-4	3-4	3-5	4-6
Pedicel color	7.5 GY 8/7	5 GY 8/9	2.5 GY 8/9	7.5 GY 6/8
Fruit shape				
Fruit length (mm)				
mean	46.0	48.4	46.5	54.5
range	40-48	47-52	41-52	51-58
Fruit width (mm)				
mean	37.4	42.6	42.4	46.7
range	33-46	40-46	36-46	42-54
Length/ width				
ratio	1.26	1.17	1.08	1.15
range	1.0-1.4	1.1-1.2	1.0-1.2	1.0-1.2
subjective	Obovate-flat	Medium	Medium	Medium-long
conic	conic	conic		
Primary/secondary fruit comparison				
size (subjective)	50-70%	55-75%	55-65%	60-80%
shape	similar shape, more conic	similar shape	similar shape	similar shape

TABLE 4-continued

Flower and fruit characters for 'Fronteras' and three comparison cultivars.

Character	Cultivar 'Camarosa'	'Ventana'	'Benicia'	'Fronteras'
Extent/size of hollow core	small-absent	small	small-absent	small-absent
Calyx position	indented-neck	indent-reflexed	even-indented	Indented-even
size relative to fruit	equal or less than fruit diameter	equal or less than fruit diameter	equal or greater than fruit diameter	equal or less than fruit diameter
Seed position	indented-extruded	mostly even	even-indented	indented-extruded
Adherence of Calyx to Fruit	weak	intermediate	weak	intermediate

Flower and plant measurements obtained on April, 2012, fruit measurements May 10-20, 2012.

[0019] 'Fronteras' has been tested under a variety of cultural regimes, and optimal performance is obtained when nursery treatments and nutritional programs similar to those for 'Camarosa', 'Ventana', and 'Benicia' are used. In general, plants of 'Fronteras' are greater in vigor than the comparison cultivars with very early season planting. 'Fronteras' retains excellent fruit quality in summer planting systems.

[0020] When treated with appropriate planting regimes, 'Fronteras' has substantially larger sized fruit and produces individual-plant yields greater than any of the comparison cultivars (Table 5). Commercial appearance ratings have also been substantially better than those for all of the comparison cultivars, especially in comparison with 'Camarosa'. Fruit for 'Fronteras' is similar in firmness to fruit from 'Ventana', less firm than the other comparison cultivars. Subjectively, 'Fronteras' has excellent flavor. The fruit will be exceptional for both fresh market and processing, and will be useful for home garden purposes.

TABLE 5

'Fronteras' and three comparison cultivars evaluated at the Watsonville Research Facility in 2010-12. All plants for these trials were harvested from a commercial nursery near Macdoel, CA on October 15-16, and transplanted after 6-7 days supplemental storage. Fruit harvest was initiated in early April and continued through the last week of August. (52" 2-row beds, 17,300 plants/acre).

Item	Yield (g/plant)	Appearance Score (5 = best)	Fruit Size (g/fruit)	Firmness
'Camarosa'	1,815	2.8	27.1	11.6
'Ventana'	2,080	3.3	30.1	10.2
'Benicia'	1,649	3.4	33.1	11.1
'Fronteras'	2,793	4.2	35.1	11.1

What is claimed is:

1. A new and distinct cultivar of strawberry plant having the characteristics substantially as described and illustrated herein.

* * * * *

FIG. 1

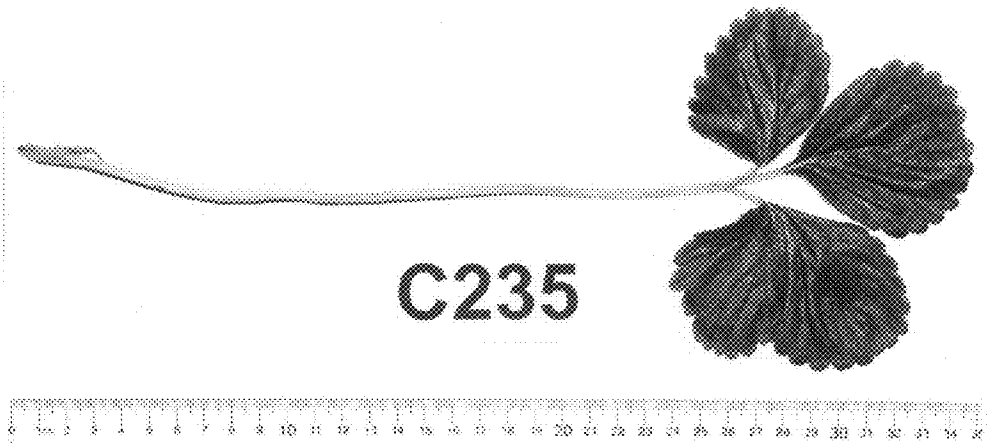

FIG. 2

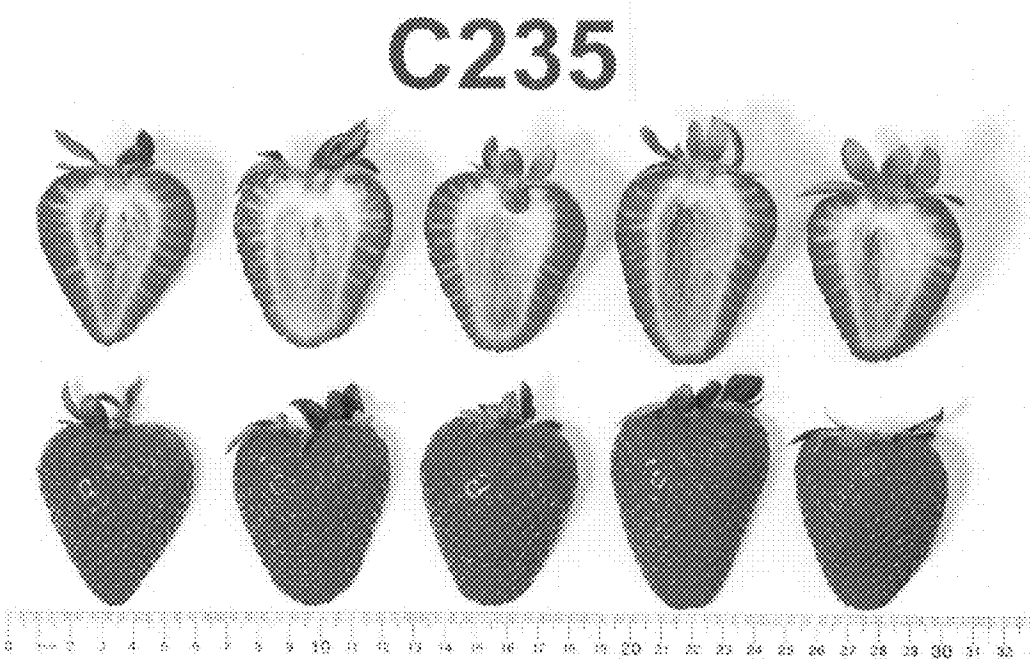

FIG. 3